Listing of Claims

This listing of claims will replace all prior versions, and listings, of the claims in this application.

Claim 1 (currently amended): A method for managing an adaptive broadcast channel in a network having nodes communicating via scheduled time slots on a time multiplex basis, comprising ~~the steps of~~:

establishing a broadcast schedule having a plurality of transmit broadcast slots;

associating at least one standby communication slot with at least one transmit broadcast slot of the broadcast schedule;

assigning a specific transmit broadcast slot to a specific node of the network, the specific node being then permitted to transmit a broadcast message during the specific transmit broadcast slot;

designating at least one of the at least one standby communication ~~slots~~ slot associated with the specific transmit broadcast slot to be used by the specific node for reception of communications; and

indicating a status of the designated standby communication slot, wherein another node of the network may use the at least one designated standby communication slot to transmit to the specific node.

Claim 2 (canceled)

Claim 3 (currently amended): The method of claim ~~2~~ 1, wherein said indicating ~~step~~ signals whether the designated standby communication slot is currently being used to receive a communication.

Claim 4 (currently amended): The method of claim ~~2~~ 1, wherein said indicating ~~step~~ signals whether a transmission conflict exists in the designated standby communication slot.

Claim 5 (currently amended): The method of claim 1, further comprising ~~the step of~~ relating a specific neighbor node with at least one of the designated standby communication slots, wherein the specific neighbor node can use the at least one related designated standby communication slot to transmit to the specific node.

Claim 6 (currently amended): The method of claim 5, further comprising ~~the step of~~ transmitting in the related designated standby communication slot when it is not being used for communication by the specific node or the specific neighbor node related thereto, the transmission being performed without prior reservation, and the transmission being performed by a transmitting node other than the specific neighbor node related to the designated standby communication slot.

Claim 7 (currently amended): The method of claim 5, further comprising ~~the step of~~ explicitly reserving, by a transmitting node other than the specific neighbor node, at least one of the designated standby communication slots related to the specific neighbor node, the at least one explicitly reserved standby communication slot not being currently used for communication by the specific neighbor node, and wherein the transmitting node reserves the at least one explicitly reserved standby communication slot in order to transmit to the specific node.

Claim 8 (currently amended): The method of claim 1, wherein said establishing ~~step~~ further comprises ~~the step of~~ optimizing the broadcast schedule to prevent collisions in the at least one standby communication slot by scheduling unique time slot and channel combinations that are keyed to the transmit broadcast slot assigned to each neighbor of the specific node.

Claim 9 (currently amended): The method of claim 8, wherein said optimizing ~~step~~ further comprises ~~the step of~~ determining how many channels and time slots are required to handle an expected maximum number of simultaneous transmissions in the network.

Claim 10 (currently amended): The method of claim 9, wherein said determining ~~step~~ comprises ~~the step of~~ calculating how many ~~communication~~ channels are required by solving C = N/2, and calculating how many ~~communication~~ time slots are required by solving S = 2(N - 1), where C represents the number of channels being determined, S represents the number of ~~communication~~ time slots being determined, and N represents the number of nodes in the neighborhood of the receiving nodes.

Claim 11 (currently amended): The method according to claim 5, further comprising ~~the step of~~ optimizing the broadcast schedule in a manner such that when a first node is determining whether to transmit in a designated standby communication slot related to another node, ~~the~~ any available ~~options~~ option will carry a substantially equal probability of blocking the first node's own opportunity to transmit and of blocking its own opportunity to receive.

Claim 12 (currently amended): The method of claim 9, ~~wherein the required number of channels is a known constant, and~~ wherein said determining step comprises ~~the step of~~ calculating how many ~~the required number of communication~~ time slots are required according to:

$$S \equiv \frac{N(N-1)}{C}$$

where C represents ~~the~~ a fixed number of channels, S represents ~~the number of~~ how many ~~communication~~ time slots ~~being determined~~ are required, and N represents the number of nodes in the neighborhood of the receiving nodes.

Claims 13-20 (canceled)